UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,469	12/31/2003	Larry C. Hardin	WOG 2948.0022	9865

152 7590 09/15/2005		EXAMINER
CHERNOFF, VILHAUER, MCCLUNG & STENZEL		YAM, STEPHEN K

ART UNIT	PAPER NUMBER
2878	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/750,469	HARDIN ET AL.
	Examiner	**Art Unit**	
	Stephen Yam	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 May 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____ .

DETAILED ACTION

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because

reference character "100, 102, 104, 106, 108, 110, 112, 114, 116, 118" has been used to

designate both the steps outlined in Fig. 2A, the optical components in Fig. 16/17/19, and the

steps outlined in Fig. 20A/20B/20C. Corrected drawing sheets in compliance with 37 CFR

1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any

amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. Each drawing sheet

submitted after the filing date of an application must be labeled in the top margin as either

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not

accepted by the examiner, the applicant will be notified and informed of any required corrective

action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2.   Claim 5 is objected to because of the following informalities:

In Claim 5, line 2, "a light-sensitive device" lacks proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1-4, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Long US

Patent No. 3,811,010.

Regarding Claim 1, Long teaches (see Fig. 1-4) an intrusion detection system comprising

a pair of optical lenses (in television cameras (10, 12), since television cameras inherently have a

focusing lens) arranged a predetermined distance apart (see Fig. 1 and 3) and having overlapping

fields of view within an area (1, 2, 3) (see Fig. 1 and 3) to be monitored to form a common field

of view (see Fig. 1 and 3), at least one light-sensitive device (10, 12) responsive to light from

each of the optical lenses, a range detector (42) responsive to signals from said light-sensitive

device operable to determine a range to an object within the common field of view ("E... L"- see

Fig. 3 and 4), and a range discriminator (determining correlation of positions- see Col. 4, lines

55-60) for setting at least one range gate (2) so as to sense objects within said common field of

view at predetermined ranges (within zone 2) (see Fig. 3) and for ignoring objects that appear

outside of said predetermined ranges (see Col. 1, lines 39-43, Col. 3, lines 12-25, and Col. 4,

lines 55-60).

Regarding Claim 2, Long teaches (see Fig. 1 and 3) a light-sensitive device (10, 12) for

each lens.

Regarding Claim 3, Long teaches the light-sensitive devices including light-sensitive

elements arranged in lines of pixels (since a video camera contains a photosensitive pixel array)

operably selected by the range discriminator (see Fig. 4) to define the ranges included within the

range gate (position corresponding to both television camera pixel arrays where the curves

overlap at object position I).

Regarding Claim 4, Long teaches multiple sets of lines of pixels (pixels of the television

cameras corresponding to detection of object in zones 1, 2, or 3- see Fig. 4, "E... L") operably

selected by the range discriminator to provide multiple range gates (zone 1, zone 2, zone 3) (see

Fig. 1 and 3) for the selective detection of objects within said common field of view.

Regarding Claim 6, Long teaches (see Fig. 1-4) an intrusion detection system for

monitoring a secure area comprising a pair of electro-optical devices (10, 12) arranged a

predetermined distance apart (see Fig. 3) having a common field of view in the secure area

(zones 1, 2, 3) to be monitored, each electro-optical device comprising a lens (since television

cameras inherently have a focusing lens) and a light-sensitive element (since television cameras

inherently have an imaging pixel array, providing electrical signal outputs (28, 44)), each light-

sensitive element having a pixel array of multiple lines of pixels, a data processing device (42)

responsive to the light-sensitive element of each electro-optical device (see Col. 4, lines 51-60),

the data processing device having a range detector to detect the presence of objects in the area to

be monitored (see Col. 4, lines 7-14), said data processing device including a range gate selector

(see Fig. 3) for discriminating (objects in detection area vs. background- see Col. 2, lines 25-31

and Col. 4, lines 3-6) among said objects sensed by the range detector by extracting image data

(see monitors in Fig. 4) from selected ones of said multiple lines of pixels (corresponding to

distance of object "E... L"- see Fig. 3 and 4) in each said respective pixel array.

Regarding Claim 7, Long teaches said range gate selector is operable to create multiple

zones (zones 1, 2, 3) (see Fig. 3) of ranges within said secure area to be monitored.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long in

view of Saban US Patent No. 5,500,525.

Regarding Claims 5 and 8, Long teaches the system in Claims 4 and 6, according to the

appropriate paragraph above. Long does not teach a velocity detector responsive to signals from

the light-sensitive device and operable to determine velocity of an object sensed by said range

detector within the ranges spanned by said range gates. Saban teaches a similar system with a

range gate (23) (see Fig. 4), with a velocity detector (see Col. 5, lines 46-49) responsive to

signals from a light-sensitive device (3) (see Fig. 2) and operable to determine velocity of an

object sensed by said range detector (to determine a potential threat) within the ranges spanned

by said range gate (see Col. 5, lines 26-28). It would have been obvious to one of ordinary skill

in the art at the time the invention was made to provide a velocity detector responsive to signals

from the light-sensitive device and operable to determine velocity of an object sensed by said

range detector within the ranges spanned by said range gates, as taught by Saban in the system of

Long, to provide determination of the intruding object's movement for improved discrimination

of the threat level of the intruding object.

7.   Claims 9-12, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Long in view of Mulleer US Patent No. 5,045,702.

        Regarding Claim 9, Long teaches the system in Claim 1, according to the appropriate

paragraph above. Long also teaches the pair of optical lenses situated a predetermined distance

above the horizontal ground surface (see Fig. 3). Long does not teach the area to be monitored is

defined at least in part by a horizontal ground surface and the pair of optical lenses having lines

of sight that intersect the horizontal ground surface at predetermined distances from the lenses.

Muelleer teaches (see Fig. 9-11) a similar system, with an optical lens (see Col. 1, lines 18-23

and Col. 6, lines 58-60) situated a predetermined distance above the horizontal ground surface

(see Col. 7, lines 13-17), where the area to be monitored is defined (see Fig. 10, 11 and Col. 7,

line 31) at least in part by a horizontal ground surface (see Fig. 10) and the optical lens has a line

of sight that intersect the horizontal ground surface at a predetermined distance from the lens

(see Fig. 10). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to provide the area to be monitored is defined at least in part by a horizontal

ground surface and the optical lenses having lines of sight that intersect the horizontal ground

surface at predetermined distances from the lenses, as taught by the Mulleer, in the system of

Long, to provide tight coverage of the monitored area to detect short intrusive objects.

Regarding Claim 10, Long teaches (see Fig. 1 and 3) a light-sensitive device (10, 12) for

each lens.

Regarding Claim 11, Long teaches the light-sensitive devices including light-sensitive

elements arranged in lines of pixels (since a video camera contains a photosensitive pixel array)

operably selected by the range discriminator (see Fig. 4) to define the ranges included within the

range gate (position corresponding to both television camera pixel arrays where the curves

overlap at object position I).

Regarding Claim 12, Long teaches multiple sets of lines of pixels (pixels of the television

cameras corresponding to detection of object in zones 1, 2, or 3- see Fig. 4, "E... L") operably

selected by the range discriminator to provide multiple range gates (zone 1, zone 2, zone 3) (see

Fig. 1 and 3) for the selective detection of objects within said common field of view.

Regarding Claim 14, Long teaches (see Fig. 3-4) an intrusion detection system for

monitoring a secured area (zones 1, 2, 3) comprising a pair of passive electro-optical sensors (10,

12), each sensor including a lens (since television cameras inherently have a focusing lens) and a

light-sensitive device (since television cameras inherently have an imaging pixel array, providing

electrical signal outputs (28, 44)) having rows of electronically scanned pixel elements, each row

of pixel elements being responsive to light from objects appearing within said area (see (42)

output in Fig. 4) at respective ranges (see Fig. 4), said pair of sensors being mounted a

predetermined distance apart (see Fig. 3), and a data processing module (42) coupled to the light-

sensitive devices (see Col. 4, lines 51-60) and having a range gate selector (see Fig. 3) for

selecting predetermined lines of pixels (see Fig. 4) for processing (see Col. 4, lines 51-60)

scanned image data from objects appearing at predetermined ranges (zone 1, zone 2, zone 3).

Long does not teach the pair of sensors aimed downward into said secured area at an angle

obtuse to a horizontal reference line. Muelleer teaches (see Fig. 9-11) a similar system, with an

passive electro-optical sensor (see Col. 1, lines 5-7) aimed downward into said secured area at an

angle obtuse to a horizontal reference line (see Fig. 10). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to provide the optical sensors aimed

downward into said secured area at an angle obtuse to a horizontal reference line, as taught by

the Mulleer, in the system of Long, to provide tight coverage of the monitored area to detect

short intrusive objects.

Regarding Claim 15, Long teaches said range gate selector is operable to create multiple

zones (zones 1, 2, 3) (see Fig. 3) of ranges within said secure area to be monitored.

8.   Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long in

view of Mulleer, further in view of Saban.

Regarding Claims 13 and 16, Long in view of Mulleer teach the system in Claims 12 and

14, according to the appropriate paragraph above. Long does not teach a velocity detector

responsive to signals from the light-sensitive device and operable to determine velocity of an

object sensed by said range detector within the ranges spanned by said range gates. Saban

teaches a similar system with a range gate (23) (see Fig. 4), with a velocity detector (see Col. 5,

lines 46-49) responsive to signals from a light-sensitive device (3) (see Fig. 2) and operable to

determine velocity of an object sensed by said range detector (to determine a potential threat)

within the ranges spanned by said range gate (see Col. 5, lines 26-28). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to provide a

velocity detector responsive to signals from the light-sensitive device and operable to determine velocity of an object sensed by said range detector within the ranges spanned by said range gates, as taught by Saban in the system of Long in view of Muleer, to provide determination of the intruding object's movement for improved discrimination of the threat level of the intruding object.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hardin et al. US Patent No. 5,586,063, teaches a system for detecting optical range and speed of a target object.

Yokoyama et al. US Patent No. 5,602,944, teaches a system fro detecting an object using a pair of image sensors having different optical paths.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SY

THANH X. LUU
PATENT EXAMINER